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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,885	09/30/2005	Yasuo Omi	1141/75103	6799

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EXAMINER	
GUPTA, VANI	

ART UNIT	PAPER NUMBER
3768	

MAIL DATE	DELIVERY MODE
04/01/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/551,885	OMI ET AL.	
	Examiner	Art Unit	
	VANI GUPTA	3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

1. Claims 1 – 20 are rejected under 35 USC 102(a) as being anticipated by Baba et al. (WO 2004 JP024003).

Regarding Claims 1 - 20, Baba discloses that an image diagnostic apparatus such as an ultrasound diagnostic apparatus, a magnetic resonance imaging (MRI) apparatus, and/or an X-ray CT apparatus is capable of displaying a tomographic image of a region of an object to be examined on a monitor for conducting a diagnosis. Specifically, tomographic images can allow a diagnostician to diagnose the function of a variety of organs such as a circulatory organ by observing movement of the organ structure or tissue (paragraph [0002]).

Baba explains that this is generally accomplished by producing pluralities of frames of tomographic functional images of the organ under examination, and displaying this image on a display unit (paragraph [0008]). He presents an invention (fig. 1) comprising an image storing unit (#1), display unit (#2), console (#3), an automatic tracking unit (#4), and a signal line (#6), which can allow one to accurately diagnose the condition of an organ during a quantitative evaluation of its functions. This can be done by extracting an outline of a dynamic (or moving) atrium wall or ventricle wall, and superposing, overlaying, or overlapping the outline of the moving wall on the displayed image (i.e., quantitatively measuring the dynamic state of the

heart tissue by displaying its movement); and calculating the volume of the ventricle from the displayed functional images (paragraph [0003]).

Quantitative values such as velocity and speed of movement of the organ wall(s) can help determine the blood volume of the ventricle. This is accomplished by tracking the coordinates of the designated portion of the organ, and calculating the movement based on the coordinate information, while using the automatic tracking system. Additionally, this information can be represented by a line graph that may be displayed with the corresponding image on the monitor (paragraph [0034], last 9 lines).

Baba also explains that the designated areas of interest of the image(s) are extracted or located by setting a searchable, rectangular, area by adding pixels to the upper, lower, right, and left sides of an image (Fig. 4(b)). Any portion of an organ may be monitored. For example, it is possible to obtain a measurement of pulse wave of a large vessel wall such as a carotid artery. By setting a plurality of designated portions in a longitudinal direction of blood vessel wall and quantitatively measuring and comparing the moving distance of those designated portions, a degree of hardening of the arteries can be understood (paragraph [0070]).

Baba also gives examples of how the moving direction of each of designated points of an organ structure can be displayed in different colors. Additionally, a brightness modulation may be provided in accordance with the moving speed. Therefore, it is possible to grasp the movement of the cardiac muscle from a color image display (paragraph [0045]).

Baba's invention also provides a control method of region-of-interest (ROI) tracking. The console allows one inputting a command to form an ROI, while the automatic tracking unit ensures that the ROI follow the tissue movement in the moving image displayed on the display

unit. The automatic tracking unit includes display control means (Fig. 15, #14) for superposing the ROI calculated based on a coordinate of its reference point after movement on an another frame image in the display. A ROI-measured-information-calculating unit (fig. 15, #15) has a function that allows one to quantitatively calculating a brightness of pixel, a brightness average, a brightness shift, and so on based on the measured information such as a pixel value inside the ROI. By measuring the brightness average inside the ROI before and after movement, it is possible to accurately and quantitatively measure the blood flow in the moving cardiac muscle; and therefore, possibly, accurately and properly examine and diagnose the development and degree of a symptom or ailment (paragraph [0057 – 0069]).

Lastly, Baba discusses the possibility of applying an SAD method wherein an absolute value of a difference between corresponding pixel values of each pixel is calculated, and the sum of the absolute values is used as a correlation value; and an SSD method wherein an absolute value of a difference between corresponding pixel values of each pixel is calculated, and the sum of square values of the absolute values is used as a correlation value (paragraph [0073]).

Response to Arguments

Applicant's arguments filed October 24, 2008 have been fully considered but they are not persuasive. Applicants argue that the prior art does not suggest displaying functional images as overlapped images. Examiner respectfully disagrees and directs Applicant to the rejections of claims 1 – 20 above which discuss "superposing," or "overlaying" images which is the same as "overlapping images," as is known in the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VANI GUPTA whose telephone number is (571)270-5042. The examiner can normally be reached on Monday - Friday (8:30 am - 5:30 pm; EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-2083. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/V. G./
Examiner, Art Unit 3768

/Long V Le/
Supervisory Patent Examiner, Art Unit 3768